EFFECTS OF A PREBIRTH COPARENTING INTERVENTION ON THE PARENTING BEHAVIORS OF YOUNG FATHERS

by

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ABSTRACT

The current study investigated the effectiveness of a prebirth coparenting intervention in improving father involvement and the quality of fathering amongst adolescent and young fathers. Participants included 96 expectant adolescent couples who comprised the first wave of participants in the Young Parenthood Study. Adolescent couples participated in a baseline assessment occurring before the adolescent mother was 26 weeks gestation, and participated in two follow-up assessments at 8 weeks and 18 months postbirth. Adolescent couples were randomized into the intervention group (n=51) or control group (n=45) following the baseline assessment, with intervention couples participating in 5-10 intervention sessions occurring before the baby was born. The intervention was designed to improve the quality of the coparenting relationship, with the intention that the quality of the coparenting relationship would "spill-over" into the quality of parent-child relations.

Results indicated that fathers participating in the coparenting intervention had higher father-reported scores (but not mother-reported scores) of father involvement at 18 months postbirth as compared to fathers in the control group. Additionally, although only marginally significant, fathers in the coparenting intervention were warmer with their children during a play interaction at the 18-month follow-up. There were no observed intervention effects, however, on the quality of the coparenting relationship at follow-up, but the quality of the coparenting relationship was related to both father involvement scores and father warmth. As the first study to investigate the use of a

coparenting intervention with adolescent mothers and young fathers together, the results of the current study offer support for the continued development of coparenting interventions for use with adolescents.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

Currently in the United States, approximately 40 out of every 1000 adolescents between the ages of 15 and 19 give birth each year (Hamilton, Martin & Ventura, 2007). While the rate of adolescent pregnancy has been decreasing since 1991, 2006 marked the first increase in teen birthrates in 15 years (Hamilton, Martin & Ventura), leaving the United States with one of the highest teen birthrates in the industrialized world (Singh & Darroch, 2000). This high number of adolescent births is of concern, as studies have shown that children born to adolescents are more likely to have developmental delays (Borkowski et al., 2002), are more likely to be insecurely attached (Lounds et al., 2005; Spieker & Bensley, 1994; Ward & Carlson, 1995), and are at higher risk for internalizing and externalizing problems (Pogarsky, Thornberry, & Lizotte, 2006). These negative developmental outcomes coupled with the high rate of teen pregnancy begin to highlight the need for additional resources for young parents.

A brief glimpse into the current research findings on adolescent mothers further emphasizes the need for interventions for young parents. For example, research on adolescent mothers has shown that they tend to be less empathic and less responsive as compared to older mothers (Coll, Hoffman, & Oh, 1987; Elster, McAnarney, & Lamb, 1983; Miller & Moore, 1990), perhaps due to the increased stress that adolescent mothers experience (Garcia-Coll, 1990; Passino & Whitman, 1993). Becoming a mother can be a stressful transition for women of any age (Cowan & Cowan, 1992; Feldman & Nash,

1984), but adolescent mothers may be less developmentally equipped to handle the responsibilities of becoming a mother (Chase-Lansdale & Brooks-Gunn, 1994). Because of this, parenting interventions may be particularly beneficial for young mothers.

Looking into the research literature on adolescent and young fathers, however, shows a relative lack of research in comparison to research on young mothers. While adolescent mothers have consistently been in the research literature for the past 30 years, it has only been more recently that researchers have begun to explore the experiences of adolescent and young fathers and the roles they play in their children's lives. Although the research on adolescent fathers is minimal, the current research continues to emphasize the need for interventions not only for adolescent mothers, but for adolescent fathers as well. For example, studies have found that by 18 months following birth, only 16% - 29% of young fathers either live with their child or provide child support (Danziger & Radin, 1990; Hardy, Duggan, Masnyk & Pearson, 1989). This pattern of disengagement is of concern as current research has indicated that positive father involvement plays an important role in the developmental outcomes of children (Marsiglio, Amato, Day & Lamb, 2000). There is also some evidence that the effect of father involvement on child development is even stronger for children born to adolescent mothers (Cutrona, Hessling, Bacon & Russell, 1998; Furstenberg & Hughes, 1995). Considering the implications of the lack of father involvement amongst young fathers in the context of the previously discussed research on adolescent mothers and their children fully accentuates the need for effective interventions for adolescent parents.

Parenting Interventions for Young Fathers

In recent years there has been a growing number of parenting intervention programs available for adolescent mothers, including some that have demonstrated success in improving both mother and child outcomes (Mann, Pearl & Behle, 2004; Stoiber and McIntyre, 2006). These parenting interventions, however, primarily focus on mother-child relations and place little emphasis on either father-child or mother-father relations.

While the number of programs available for young fathers is growing, it is still far less than the number of programs available for young mothers. Additionally, programs for young mothers have aimed at improving the quality of parenting, while programs for young fathers have primarily focused on increasing the *quantity* of father involvement, rather than the *quality* of father involvement. For example, the Parent Empowerment Project, a group intervention designed for high-risk families, was modified for use with young fathers in the juvenile justice system (Parra-Cardrona, Wampler, & Sharp, 2006). This program was found to be helpful to young fathers in increasing their commitment and involvement with their children; however, little is known about the effectiveness of such programs in improving the quality of father-child interactions.

It is not surprising that interventions for young fathers to date have focused heavily on increasing father presence, given that early research characterizing young fathers has focused on their relative absence in comparison to older fathers and the negative developmental outcomes associated with father absence, such as dropping out of school (McLanahan, 1985) and behavioral or emotional problems (Gabel, 1992). However, other studies have suggested that some of the negative developmental

outcomes associated with father absence may really be a result of economic factors (Crockett, Eggebeen, & Hawkins, 1993), indicating that conceptualizations of young fathers need to move beyond a dichotomous focus on either father absence or father presence.

More recent research on fathering has provided further impetus for focusing interventions around improving the *quality* of parenting behaviors. For example, in a study investigating factors affecting father-child attachment (Brown, McBride, Shin, & Bost, 2007), the *quality* of fathering was found to moderate the effects of the *quantity* of father involvement. Specifically, when fathers displayed high quality parenting behavior, father involvement was essentially unrelated to attachment security; however, when the quality of fathering was low, father involvement was inversely related to attachment security. Similarly, Easterbrooks and Goldberg (1984) found that in predicting toddler development, the qualitative factors related to parenting were more salient than quantitative factors. These findings highlight the importance of focusing interventions for young fathers on improving not only the quantity of father involvement, but the quality of fathering, as well.

With the understanding that future interventions for young fathers need to place greater emphasis on improving both the quality and quantity of father involvement, it is important to consider the factors that impact father involvement amongst young fathers when developing effective interventions for this population. One factor that is repeatedly emerging as a strong influence on fathering is the quality of the relationship between the young father and the adolescent mother. Current research has indicated that a strong mother-father relationship can help to buffer the effects of the barriers to positive father

involvement that young fathers face, including an increased rate of poverty and unemployment, a lack of education, and poor relationship skills (Marsiglio & Cohan, 1997). There is also evidence that a strong mother-father relationship can help to improve not only the quantity, but the quality of father involvement amongst young fathers (Easterbrooks, Barrett, Brady & Davis, 2007; Florsheim & Smith, 2005).

Given the importance of the mother-father relationship in fostering positive father involvement, it seems that interventions for young fathers should place at least some emphasis on strengthening this relationship. However, there have been few interventions for adolescent parents that work with both the mother and father together or even place emphasis on the importance of the mother-father relationship (Fagan, 2008).

Coparenting and Intervention

The quality of the mother-father relationship has repeatedly been implicated as an important factor affecting parent-child relations (Coiro & Emery, 1998; Cowan & Cowan, 2000; Erel & Burman, 1995; Katz & Gottman, 1996; Krishnakumar & Buehler, 2000). For example, high marital stress has been negatively correlated with parental sensitivity (Pelchat, Bisson, Bois, & Saucier, 2003) and a harmonious marital relationship is associated with better quality of parenting (Cox, Owen, Lewis & Henderson, 1989). It has been hypothesized that this association results from the quality of the couple relationship "spilling-over" into parenting behaviors and the parent-child relationship, hence known as the "spill-over" effect.

While early research on the spill-over effect was conducted with adult married couples, recent research has provided evidence of the spill-over effect in samples of adolescent couples as well, and has indicated its importance for both mothers and fathers

(Easterbrooks et al., 2007; Florsheim & Smith, 2005; Moore & Florsheim, 2008). For example, in a study of expectant adolescent couples, the quality of the mother-father relationship before birth was found to predict the quality of both father-child and mother-child interactions at 2 years postbirth (Florsheim & Smith). Relatedly, observed hostility in the couple relationship was found to predict observed hostility in a father-child play interaction (Moore & Florsheim, 2008).

Research on the spill-over effect has also been extended beyond the marital relationship and into the coparenting relationship, a concept that has been receiving increased attention over the past 15 years. The notion of the coparenting relationship has previously been defined as "the ways that parents and/or parental figures relate to each other in the role of parent" (Feinberg, 2003, p. 96), and does not include aspects of the mother-father relationship that are not directly related to parenting, including romantic, financial and sexual relations (Feinberg, 2003). Prior studies have indicated that the coparenting relationship may be more predictive of parenting and child outcomes than other aspects of the mother-father relationship (Feinberg, 2003). This indicates that interventions designed to improve the mother-father relationship could be more effective in also improving parenting and child outcomes if the focus of the intervention were to be on the coparenting relationship.

Research on coparenting has shown that healthy coparenting relationships positively affect both child adjustment and parenting practices. For example, within the coparenting relationship, the extent of support has been linked to children's inhibition at age three (Belsky, Putnam & Crnic, 1996), and the degree of conflict around childrearing has been linked to both parental negativity and adolescent maladjustment (Feinberg, Kan

& Hetherington, 2007). Additionally, the effect of a healthy coparenting relationship on parenting quality holds true for both mothers and fathers, and there is some evidence that the coparenting relationship may be even more important for fathers than for mothers in improving their engagement with their children (Belsky et al., 1996). With this understanding, the coparenting relationship can serve as a focus of intervention from which to improve both mother-child and father-child relations.

In working with adolescent and young fathers, a focus on the coparenting relationship may be even more important. Research has indicated that adolescent parents have much more difficulty maintaining long-term romantic relationships as compared to adults (Fagan, Farrie, Cabrera & Roy, 2007), and that with the dissolution of the romantic relationship, the coparenting relationship often ceases (Fagan et al.). By focusing interventions on improving the coparenting relationship, it may be possible for adolescent couples to maintain a healthy coparenting relationship regardless of whether they stay together romantically. For young fathers, this healthy coparenting relationship may be particularly important in increasing their father involvement with their children. Given the finding that a strong mother-father relationship can help to overcome barriers to father involvement (Marsiglio & Cohan, 1997), an intervention focusing on improving the coparenting relationship could potentially increase the extent of a young father's involvement in child-rearing activities.

Coparenting interventions are also particularly important for adolescents given research indicating that *expectant* adolescent tend to display less warmth and greater interpersonal hostility than nonexpectant adolescent couples (Moore & Florshiem, 2001). This increased level of hostility in the couple relationship is concerning, especially when

considered in the context of the spill-over effect, which indicates that young fathers are at greater risk for displaying hostile or abusive parenting behaviors when there is hostility in the couple relationship (Moore & Florsheim, 2008). Focusing interventions for young fathers on the coparenting relationship could therefore not only help to increase father involvement, but also help to improve family relations as a whole, including father-child relations.

With the understanding that coparenting interventions could be particularly beneficial for young fathers, it is important to consider the components of the coparenting relationship that can serve as targets for interventions. Feinberg (2002, 2003) has proposed a general framework for coparenting prevention and intervention, which focuses on strengthening the coparenting relationship, rather than individual parenting practices. In Feinberg's model, four factors comprise the coparenting relationship, including joint family management, support/undermining, division of labor, and child-rearing agreement. Studies have shown that interventions targeting these aspects of the coparenting relationship were successful in improving not only the coparenting relationship, but parent-child relations as well (Feinberg & Kan, 2008). These studies of coparenting, however, have focused on adult couples, and until recently, there have been no published studies of coparenting interventions for adolescents.

Fagan (2008) published the first study of a prebirth coparenting intervention for young fathers utilizing a group treatment model. The intervention focused on improving three aspects of the coparenting relationship, including support, communication around the needs of the child, and solidarity and alliance. When comparing the coparenting intervention to a typical childbirth intervention, Fagan found that the coparenting

intervention was more effective in improving fathers' perceptions (but not mothers' perceptions) of father engagement in child-rearing. Fagan did find significant differences in both mother- and father-reports of father engagement when comparing the coparenting intervention to a no-treatment comparison group. The young fathers in the no-treatment group, however, consisted of those who refused either of the interventions and who therefore were not randomized into the control group, introducing a potential confound in the study.

It is also important to note that Fagan's model of intervention involved a group intervention for young fathers that focused on coparenting topics, but did not involve the young mother in the actual intervention. As of yet, there have been no studies of coparenting interventions for adolescents which involve both the mother and father together. Including both the mother and father together in the intervention provides the opportunity to simultaneously improve the coparenting relationship between the mother and the father, the mother-child relationship and the father-child relationship.

It is also important to note that the majority of parenting and coparenting interventions have followed a group treatment model over an individual treatment model. There has been little research exploring how working with expectant couples individually as opposed to in a group setting may affect the couple relationship and parenting behaviors. While Fagan's research was seminal in laying the groundwork for the development of effective coparenting interventions for young couples, it is important to explore other models of coparenting interventions and how they may be beneficial to young parents.

The Importance of Prebirth Interventions

In designing interventions for adolescent parents, it is important to consider the timing of such interventions. The coparenting interventions discussed thus far have each occurred prenatally, taking a preventative approach to intervention. There are a number of reasons why prebirth interventions may be more effective than postbirth interventions, especially in the work with adolescents. In studies of married adult couples, it has been found that the quality of the marital relationship decreases following the birth of the couple's first child (Cowan & Cowan, 2000). This effect tends to be strongest for couples who, during the pregnancy, are in disagreement about whether or not they want to have the baby (Cowan & Cowan). While this effect was observed in a sample of married adult couples, it seems likely that this same effect would be observed in adolescent couples as well, and perhaps even to a greater degree considering that many adolescent pregnancies are unplanned. By initiating a coparenting intervention prebirth, it is the intention to better prepare the couple for the birth of the child so as to prevent or reduce the decline in the quality of the relationship that has been seen postbirth.

Another reason that a prebirth intervention may be more effective in the work with adolescents is due to the fact that a large number of young fathers cease contact with their children during the first year after birth. As previously mentioned, the quality of the father's relationship with the adolescent mother may help to maintain father involvement. Therefore, if the intervention is initiated prenatally, it may be more likely to improve the mother-father relationship in order to prevent father disengagement after the birth of the baby. This is also supported by the work of Fagan (2008).

Defining "Good Fathering"

While research in psychology has long attempted to define positive maternal characteristics, it has only been in the past several decades that there has been a burgeoning of research aiming to elucidate the concept of the "good father." While early research characterizing positive fathering behaviors has focused on the presence or absence of fathers in relation to child outcomes (e.g., Gabel, 1992; McLanahan, 1985), current research has focused on elucidating the concept of the "good father" in relation to the quality of parenting behaviors. It is important to understand the current theoretical definition of "good fathering," as it is this notion that guides the development of parenting interventions and the empirical study of their effectiveness.

While the concept of positive fathering is multifaceted and tends to vary with age, there are two components that seem essential to positive fathering, particularly in relation to toddlers. The first of these components is the capability of the father to warmly engage with his child, which is consistent with prior definitions of positive parenting with toddlers (Edwards & Liu, 1995; Grossman & Grossman, 2003). Additional support for the importance of father warmth comes from research highlighting the role that father warmth plays in child development. For example, observations of father-child interactions have indicated that the cognitive abilities of toddlers were higher when fathers were warm, communicative and playful (Shannon, Tamis-LeMonda, London, and Cabrera, 2002). Similar factors, including father warmth, have also been linked to father-child attachment security (Brown et al., 2007). Finally, interviews with low-income fathers have also implicated father warmth as an essential component to positive

fathering, as emotional support and love were identified by these fathers as one of four factors comprising "good fathering" (Summers, Boller, Schiffman, & Raikes, 2006).

A second component essential to good fathering is the capacity to encourage autonomy and exploration. According to Erikson (1966), the stage of psychosocial development corresponding to toddlerhood is that of "autonomy versus shame and doubt." In this stage, toddlers must begin to differentiate themselves from their caregivers while exploring their surroundings. In order for toddlers to achieve autonomy, their caregivers must therefore support and encourage autonomy seeking behaviors in their children. This aspect of good fathering is also consistent with prior definitions of positive parenting with toddlers (Edwards & Liu, 1995; Grossman & Grossman, 2003). Grossman and Grossman (2003) emphasize the importance of both father warmth and the encouragement of autonomy, stating that parents of toddlers should "provide a loving and trusting relationship to facilitate attachment;...enhance cognitive growth by scaffolding intellectual experiences; and motivate the child through appreciation of his or her accomplishments" (p. 14). It is the understanding that positive fathering involves both warmth and the encouragement of autonomy that guides the current study.

Current Study and Hypotheses

Having reviewed the current research on parenting behaviors of young parents and developmental outcomes associated with their children, it is clear that there is a need for interventions for adolescent parents. While there has been an increase in the number of programs available for young parents in recent years, the current research on these programs points to several deficiencies, including: 1) a relative lack of interventions

available for young fathers as compared to young mothers; 2) a focus on father *presence* over the *quality* of fathering; and 3) a lack of interventions involving *both* mothers and fathers.

In order to address these deficiencies, the current study evaluates both the quantity and the quality of parenting amongst young fathers participating in a coparenting intervention designed for adolescent couples expecting their first child. Given the demonstrated "spill-over" of the quality of the coparenting relationship into the father-child relationship, the intervention involves both the mother and father together and focuses on improving the coparenting relationship. Additionally, the intervention is administered prenatally, as a prebirth intervention may be more beneficial in preventing father disengagement and negative parenting practices occurring after the birth of the child.

The current study will also contribute to the research on coparenting interventions by including a randomized control group and analyzing the quality of the coparenting relationship as a partial mediator between the intervention and its effects on fathering behaviors. While prior research has indicated that coparenting interventions have been successful in improving both mother-father and father-child relations (Fagan, 2008; Feinberg & Kan, 2008), research has yet to examine the mediating role that the quality of the coparenting relationship could play. Considering the demonstrated spill-over of the coparenting relationship into the father-child relationship, it is likely that coparenting interventions indirectly improve the quality of fathering in part through improving the quality of the coparenting relationship. Analyzing the mediating effects of the quality of the coparenting relationship will offer additional insight into the mechanism of

coparenting interventions and how they may be beneficial to expectant adolescent couples.

Considering past research on young fathers and coparenting interventions, the following hypotheses are proposed:

Hypothesis 1: Young fathers and young mothers who participate in a prebirth coparenting intervention will report a better quality coparenting relationship following the birth of their child as compared to young fathers and mothers who do not participate in the intervention.

Hypothesis 2: Young fathers who participate in a prebirth coparenting intervention will be more involved in child-rearing activities and will display fathering behaviors that a) are higher in warmth and b) involve a higher level of autonomy-support.

Hypothesis 3: The quality of the coparenting relationship will mediate the effects of the coparenting intervention on the parenting behaviors of young fathers, such that the quality of the coparenting relationship will account for at least some of the variance in fathering behaviors between treatment groups.

METHODS

Participants

The participants in this study were 107 expectant adolescent couples who comprised the first wave of participants in the Young Parenthood Study. Participants in the Young Parenthood Study include pregnant adolescents (ages 14 to 18) and the fathers of their babies (ages 14 to 24) who are expecting their first child and have decided to keep their baby. Participants were recruited from health clinics and schools for pregnant adolescents within the Salt Lake City area. Because the Young Parenthood Study evaluates the effects of a *coparenting* intervention, adolescent mothers had to participate in the study with the father of the baby in order to be eligible, but they did not need to be romantically involved.

Procedure

After participants were recruited into the Young Parenthood Study and after informed consent was obtained, participants were administered the first assessment (baseline), which occurred prenatally before the mother was 26 weeks gestation. During the baseline assessment, the expectant mothers and fathers were each administered a series of computerized self-report measures assessing demographic information (age, ethnicity, household income) and initial levels of psychosocial functioning (depression, lifetime drug use, lifetime delinquency, and quality of relationship with partner). The

measures were collected with the mothers and fathers in separate rooms to promote more candid responses from participants.

Following the baseline assessment, participants were randomly assigned to either the intervention group or the control group, with a 1:1 ratio of intervention participants to control participants. All participants in both the intervention group and the control group participated in two follow-up assessments, occurring when the couple's child was 6 weeks old and 18 months old. During the first follow-up assessment (T2), couples completed computerized self-report measures assessing the quality of the coparenting relationship, again with mothers and fathers in separate rooms. During the second follow-up assessment (T3), couples again completed computerized self-report measures assessing the quality of the coparenting relationship as well as a measure assessing each parent's involvement in child-rearing activities. Additionally, fathers participated in a 12-minute semistructured play task with their toddler. After the completion of each assessment (baseline, T2, and T3), each participant was paid $40.

The Young Parenthood Program Intervention

Based on the demonstrated importance of the coparenting relationship in predicting both parent and child outcomes (e.g., Feinberg, 2003; Feinberg et al., 2007), the goal of the Young Parenthood Program intervention is to help adolescent couples develop the skills necessary to establish and maintain a healthy coparenting relationship so that they may provide their child with a positive family environment. The Young Parenthood Program is unique amongst coparenting programs for adolescents because it utilizes a couple treatment model, rather than a group treatment model. Each couple in the intervention was assigned a therapist (a graduate student therapist or master's level

clinician) and were paid $10 per person for each intervention session that they attended. Couples each attended between 5 and 10 therapy sessions which occurred before the baby was born.

The intervention sessions were structured around five steps, which are reflective of the components of coparenting outlined by both Feinberg (2002, 2003) and Fagan (2008) in their coparenting intervention models. During the first step of the program, the intervention focuses on building rapport and educating the couple about how their relationship is relevant to their child's development. The second step of the program is then designed to help partners clarify their personal goals and identify how their goals relate to their partner's goals, their respective roles as parents, and their co-parenting relationship. The third and fourth steps of the program, respectively, target communication skills (reflective listening, clear expression, communicating acceptance, and support) and conflict-negotiation skills in order to improve the couple's ability to function as partners regardless of relationship outcome. Finally, the fifth step of the program is designed to help the couple summarize and integrate what they have gained and to engage in the process of forecasting and preparing for future difficulties.

While the Young Parenthood Program is a manualized intervention, there is also a high degree of flexibility built into the intervention model so that the intervention can be tailored to fit each couple's needs.

Measures

Demographics

To assess socioeconomic status, participants were asked to select the range in which their household income fell. Participants were given eight choices ranging from

$0-4999 to $50,000+. Ethnicity was measured using a single item asking participants to select the ethnic group(s) to which they felt they belonged.

Psychosocial Functioning

Depression: Baseline levels of depression were assessed for both mothers and fathers using the Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown, 1996). The BDI-II is a 21-item self-report measure assessing levels of depressive symptoms using a 4-point Likert scale, and has been shown to have high reliability and validity with adolescents (Osman et al., 2004).

Drug Use: Levels of lifetime drug use were assessed at baseline for both mothers and fathers using the Drug Use Index (DUI). The DUI is a 15-item self-report questionnaire modified from the National Youth Survey (Elliott et al., 1989) to assess levels of drug and alcohol use. This index of substance use has been previously found to be adequately valid and reliable (Elliott et al., 1989; Johnson, Wish, Schmeidler, & Huizinga, 1991). Cronbach's alpha was 0.987 for males and 0.961 for females.

Delinquency: Levels of lifetime delinquency were assessed at baseline for both mothers and fathers using the Delinquent/Criminal Behavior Checklist (DCBC). The DCBC is a 24-item questionnaire based on the National Youth Survey Interview (Elliott, Huizinga, & Menard, 1989) and used to assess current and previous illegal activities. Respondents are asked to report on their frequency of engagement in specific illegal activities including theft, burglary, assault, drug dealing, carrying a weapon, and gang related activities (e.g., shooting at cars, houses, or people, participating in gang related fights) during their life time. The Youth Survey upon which this measure is based has

been previously found to have adequate reliability and validity (Elliott et al., 1989). Cronbach's alpha for the current sample was 0.925 for males and 0.860 for females.

Quality of Coparenting Relationship

The quality of the coparenting relationship was assessed using two different measures: the Quality of Relationships Inventory (QRI; Pierce, 1994) and the Parenting Alliance Inventory (PAI; Abidin, 1988). The QRI and PAI were administered together at the T2 and T3 assessments to both fathers and mothers. The QRI was also administered during the baseline assessment to assess initial levels of the quality of the couple relationship.

The QRI is a 25-item self-report measure assessing an individual's perceptions of specific dyadic relationships, including the partner relationship. The measure is comprised of three subscales measuring levels of support, conflict, and depth within a relationship. The QRI includes items such as, "To what extent could you turn to the following person for help with a problem?" and "How significant is your relationship with the following person?" Responses to items are on a 4-point scale ranging from *not at all* to *a lot*. Research on the QRI has demonstrated high internal consistency, test-retest reliability, as well as high convergent, discriminate, and construct validity (Pierce, 1996; Pierce et al., 1997). For the current sample, Cronbach's alpha for the three subscales ranged from 0.880 to 0.950 for both males and females.

The PAI is a 20-item self-report measure assessing the degree to which parents believe they have a strong working relationship with their child's other parent. Participants are asked to respond to items utilizing a 5-point Likert scale, assessing the degree to which they agree or disagree with statements such as, "When there is a problem

with our children, we work out a solution." Research on the PAI has demonstrated high internal consistency as well as high concurrent and construct validity (Abidin & Brunner, 1995). Cronbach's alpha for this sample was 0.963 for males and 0.975 for females.

The rationale behind using the QRI and PAI together as a measure of coparenting relationship quality is that these two instruments each assess different aspects of the coparenting relationship. While the QRI assesses factors that are critical elements of the coparenting relationship including support, conflict, and depth, it does not assess these factors specifically in relation to parenting. The PAI, on the other hand, assesses the mother-father relationship in the context of parenting, but does not include separate measures of support, conflict and depth.

In order to determine whether the QRI and PAI scores could be combined into a single score, principle components analysis was utilized to explore the factor structure at the scale level of the PAI and QRI subscale scores collected from participants. The participants' scores from the T2 assessment were utilized in the factor analysis as the sample size was larger at the T2 follow-up assessment as compared to the T3, and because the relations amongst these variables were likely to remain consistent over time. Additionally, separate factor analyses were conducted for the male and female participants in order to account for the interdependency between the couples' scores.

Principle components analysis revealed a unitary factor structure corresponding to coparenting relationship quality, as only one factor emerged with an Eigenvalue over 1 for both males (Eigenvalue = 2.606, % variance = 65.2) and females (Eigenvalue = 2.621, % variance = 65.5). Additionally, each of the four scales were significant contributors to the factor (see Table 1 for individual factor loadings), supporting a decision to weight

Table 1. Individual Factor Loadings of Coparenting Relationship Scales From Principal Component Analysis

Scale	Factor Loading (Males)	Factor Loading (Females)
Parenting Alliance Inventory	0.767	.880
Quality of Relationships Inventory- Support	0.883	.914
Quality of Relationships Inventory- Depth	0.896	.925
Quality of Relationships Inventory- Conflict	0.658	.396

each of these scales equally in creating an overall score of the coparenting relationship quality for both the T2 and T3 assessments. The overall "Coparenting Relationship Quality" (CRQ) score, was calculated by first converting the QRI and PAI scores into standard scores, and then adding these four standard scores together.

Father Involvement in Child-Rearing

During the T3 follow-up, the extent of father involvement in child-rearing activities was assessed using a measure adapted from the Caregiving Activities Questionnaire (NICHD, Early Child Care Research Network, 2002) and the "Who does what Questionnaire" (Cowan & Cowan, 2000). The measure includes 9 items such as bathing the child, feeding the child, playing with the child, and putting the child to bed, which are each rated on a 5-point scale (1=partner's job; 3=we share equally; 5 = my job). This questionnaire was administered to both mothers and fathers to result in mother-reported and father-reported Father Involvement (FI) scores. Mothers' scores on this measure were reverse scored so that high mother-reported and father-reported involvement scores both indicated higher levels of father involvement in child rearing activities. Cronbach's alpha was 0.898 for males and 0.931 for females.

Observed Fathering Behavior

During the T3 follow-up, fathers were asked to participate in a 12-minute unstructured play interaction with their child. The fathers were given a set of age-appropriate toys to play with on a blanket and were instructed to play with their child as they would normally. They were also asked to keep their child on the blanket in order to remain in view of the camera. After administering the instructions, the interviewer left the room so as not to distract participants during the play interaction.

The fathers' behavior during the play interaction was coded using an observational coding system based on the Structural Analysis of Social Behavior (SASB; Benjamin, 1974). The SASB model (Figure 1) is structured around three dimensions of interpersonal behavior. The first dimension is the *focus* of the behavior, which is represented in the SASB model through the inclusion of separate circumplexes corresponding to different foci of behavior. While the SASB model includes a total of three circumplexes, only two are used in the current study; Circumplex 1 corresponds to other-focused behavior and Circumplex 2 corresponds to self-focused behavior.

The second two dimensions of interpersonal behavior included in the SASB model are *affiliation* and *interdependence*, which comprise the orthogonal axes of each circumplex. *Affiliation* corresponds to the degree of warmth or hostility within a unit of behavior and is represented along the horizontal axis of the model. Behaviors falling to the left of the vertical axis are considered hostile and behaviors to the right are considered warm. *Interdependence*, or the degree of enmeshment reflected in a unit of behavior, is included on the vertical axis of the circumplex. In each of the two circumplexes, the degree of enmeshment increases as you move down the vertical axis; however, the

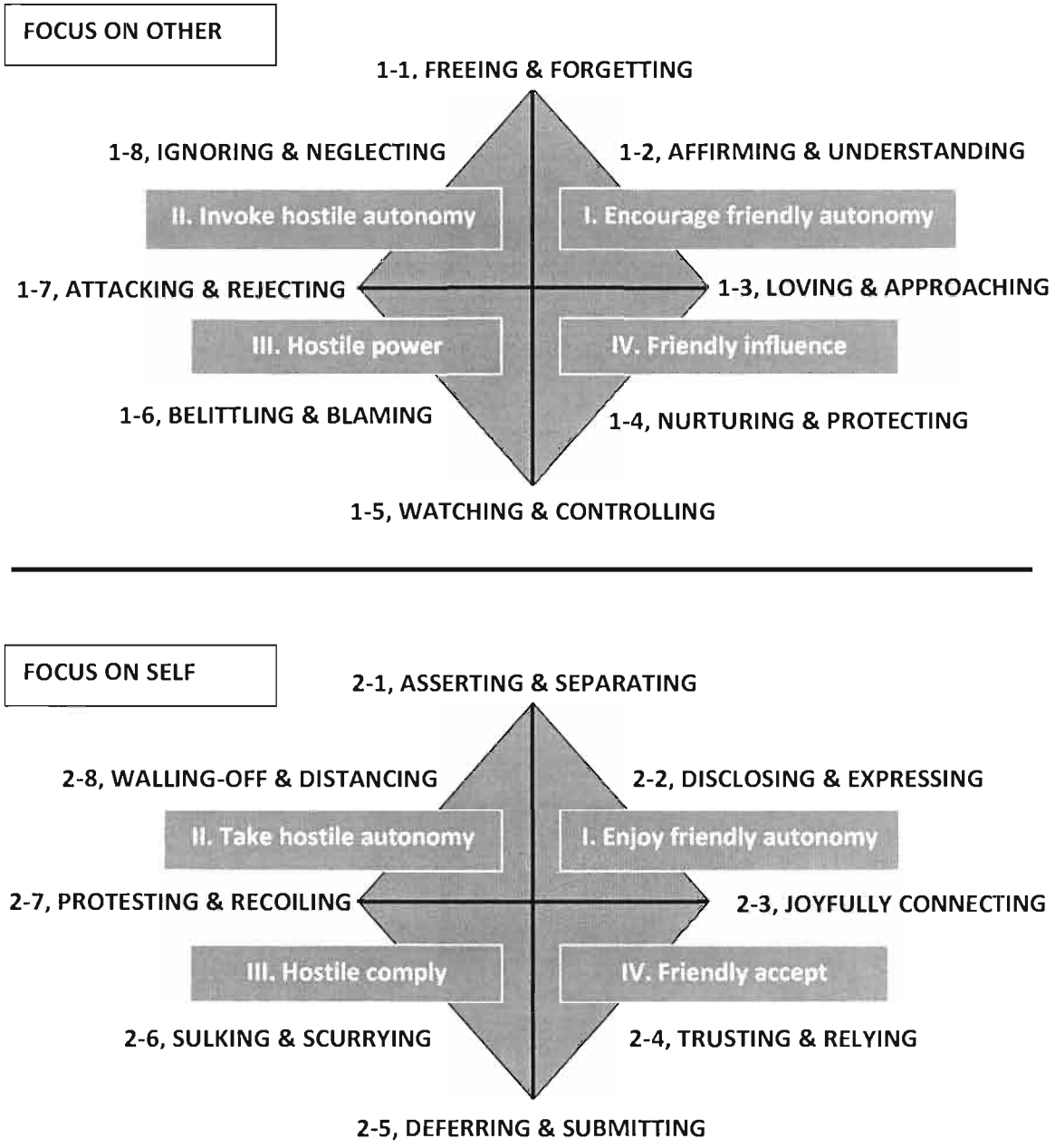

Figure 1. The Combined Quadrant and Cluster Versions of SASB Models
(From Benjamin, 2000. Copyright University of Utah. Used with permission.)

vertical axis has different interpretations based on whether the behavior is other- or self-focused. Behaviors falling below the horizontal axis are considered to be controlling when the behavior is self-focused (circumplex 2). Similarly, behaviors falling above the horizontal axis are considered to be autonomy-giving when the behavior is other-focused but are considered to be autonomy-taking when the behavior is self-focused.

Each circumplex of the SASB model consists of eight clusters of behavior corresponding to varying levels of affiliation and interdependence. Because there are two circumplexes being used in this study, with eight clusters in each circumplex, there are a total of 16 different SASB codes that can be assigned to an individual unit of behavior. It is important to note that the SASB model is intended to be used to code individual units of behavior, rather than to code an overall global assessment of an individual's behavior.

In this study, the SASB-composite system (Florsheim & Benjamin, 2001; Moore & Flrosheim) was used to code the father's behavior during the play interaction. In the SASB-composite system, coders watch the play interaction in 2-minute intervals, tallying the number of specific SASB codes for each interval. In the current study, however, 1-minute intervals were used instead of 2-minute intervals in order to ensure a higher degree of reliability. The coder than calculates a "composite" score, by tallying the total number of specific SASB codes across each 12-minute interaction. The composite scores were then used to determine a warmth score and an autonomy-support score. The warmth score was determined by dividing the total number of warm behaviors (behaviors in cluster 2, 3, or 4 of the SASB model) by the total number of nonwarm behaviors (clusters 1, 5, 6, 7, and 8) and warm behaviors. The autonomy score was determined by dividing the total percentage of autonomy-supporting behaviors (behaviors in cluster 2)

by the total number of controlling behaviors (clusters 4, 5, and 6) and autonomy-supporting behaviors.

All videos were coded by one of two graduate students who had each received a minimum of 80 hours of training in the SASB/SASB-composite coding systems. Intraclass correlations were used to determine interrater reliability, with coders demonstrating a correlation of at least 0.85 before they began coding. Additionally, 20% of the videotaped interactions were coded by both graduate students for the purpose of intermittent reliability checks. Intraclass correlations ranged from 0.81 to 0.96 throughout coding, with an average reliability of 0.89.

RESULTS

Preliminary Analyses

Preliminary analyses were conducted to assess the equivalence between intervention and control groups on participant demographics and initial levels of psychosocial functioning. Chi square analysis of the ethnic composition of treatment and control groups (reported in Table 2) indicated that there were no significant differences between groups. All other demographic variables and psychosocial functioning variables were analyzed using *t*-tests, with mothers and fathers analyzed separately. Analyses indicated that for mothers, there were no significant differences between treatment and control groups on the BDI-II, DUI, DCBC or QRI, nor in age or household income. Similar results were found for fathers, except that there was a significant difference between groups on the DUI, with control group fathers having a higher DUI score than intervention fathers at baseline ($t = 2.254$, $p = .027$; see Table 3 for group means and standard deviations). Because of this, baseline DUI scores were entered as a covariate in all analyses examining intervention effects on outcome variables.

Attrition Analyses

Initially, a total of 107 expectant adolescent couples were recruited into the study and completed the baseline assessment. However, it was later determined that 11 of these couples were no longer eligible for the study, as 5 pregnant adolescents miscarried, 2 couples gave their child up for adoption, 2 fathers were not the biological father, 1 father

Table 2. Demographic Variables by Gender and Treatment Group

	Mothers			Fathers		
Demographic Variable	Intervention ($N = 51$)	Control ($N = 45$)	Combined ($N = 96$)	Intervention ($N = 51$)	Control ($N = 45$)	Combined ($N = 96$)
Ethnicity	(%)	(%)	(%)	(%)	(%)	(%)
White	45.1	55.6	50.0	31.4	53.3	41.7
Hispanic	47.0	37.8	42.7	52.9	33.3	43.8
African American	5.9	2.2	4.2	7.8	4.5	6.2
Asian American	2.0	2.2	2.1	2.0	2.2	2.1
American Indian	0.0	2,2	1.0	5.9	4.5	5.2
Pacific Islander	0.0	0.0	0.0	0.0	2.2	1.0
Age in years (M*(SD)*)	16.55 *(1.22)*	16.78 *(1.02)*	16.66 *(1.13)*	18.31 *(2.19)*	18.76 *(2.09)*	18.52 *(2.15)*
Household Income (average range)	$10000 - $14999	$10000 - $14999	$10000 - $14999	$15,000- $19,999	$15000- $19,999	$15000- $19,999

Table 3. Baseline Psychosocial Functioning by Gender and Treatment Group

	Mothers		Fathers	
Baseline Measure	Intervention (*n*=51) M *(SD)*	Control (*n*=45) M *(SD)*	Intervention (*n*=51) M *(SD)*	Control (*n*=45) M *(SD)*
BDI-II	8.84 *(5.81)*	10.09 *(4.99)*	6.59 *(9.04)*	6.00 *(7.18)*
DCBC-lifetime	7.67 *(9.09)*	8.20 *(6.90)*	13.18 *(14.19)*	16.67 *(16.50)*
DUI-lifetime	12.21 *(14.86)*	13.89 *(15.28)*	19.45 *(22.76)**	31.91 *(31.18)**
QRI-partner	78.45 *(12.34)*	81.49 *(12.21)*	78.63 *(10.45)*	80.71 *(9.92)*

* Indicates statistically significant difference between groups ($p < .05$)

was too old, and 1 father was deceased at the time of follow-up. These couples were therefore not included in the current data set, leaving a total of 96 eligible expectant adolescent couples (45 intervention and 51 control). Of the 96 eligible expectant couples, 86 adolescent mothers (89.6%) and 82 young fathers (85.4%) returned to complete the T2 follow-up. For the T3 follow-up, 76 adolescent mothers (79.2%) and 70 young fathers (73%) returned. Thirteen adolescent mothers (13.5%) and 13 adolescent fathers (13.5%) refused to participate, and 7 adolescent mothers (7.3%) and 13 adolescent fathers (13.5%) were unable to be contacted. (See Figure 2 for a representation of attrition rates by treatment group.) Results indicated that there was not a significant difference in attrition rates between the treatment and control groups for either mothers or fathers at the T2 and T3 follow-up.

While survey data was collected for all 70 fathers returning for the follow-up assessment, only 56 completed the video-taped assessment used to assess the quality of fathering, primarily as a result of not having the child with them at the time of the follow-up assessment. In order to examine whether this might be a function of differences in father involvement, *t*-tests were used to examine whether mother-reported and father-

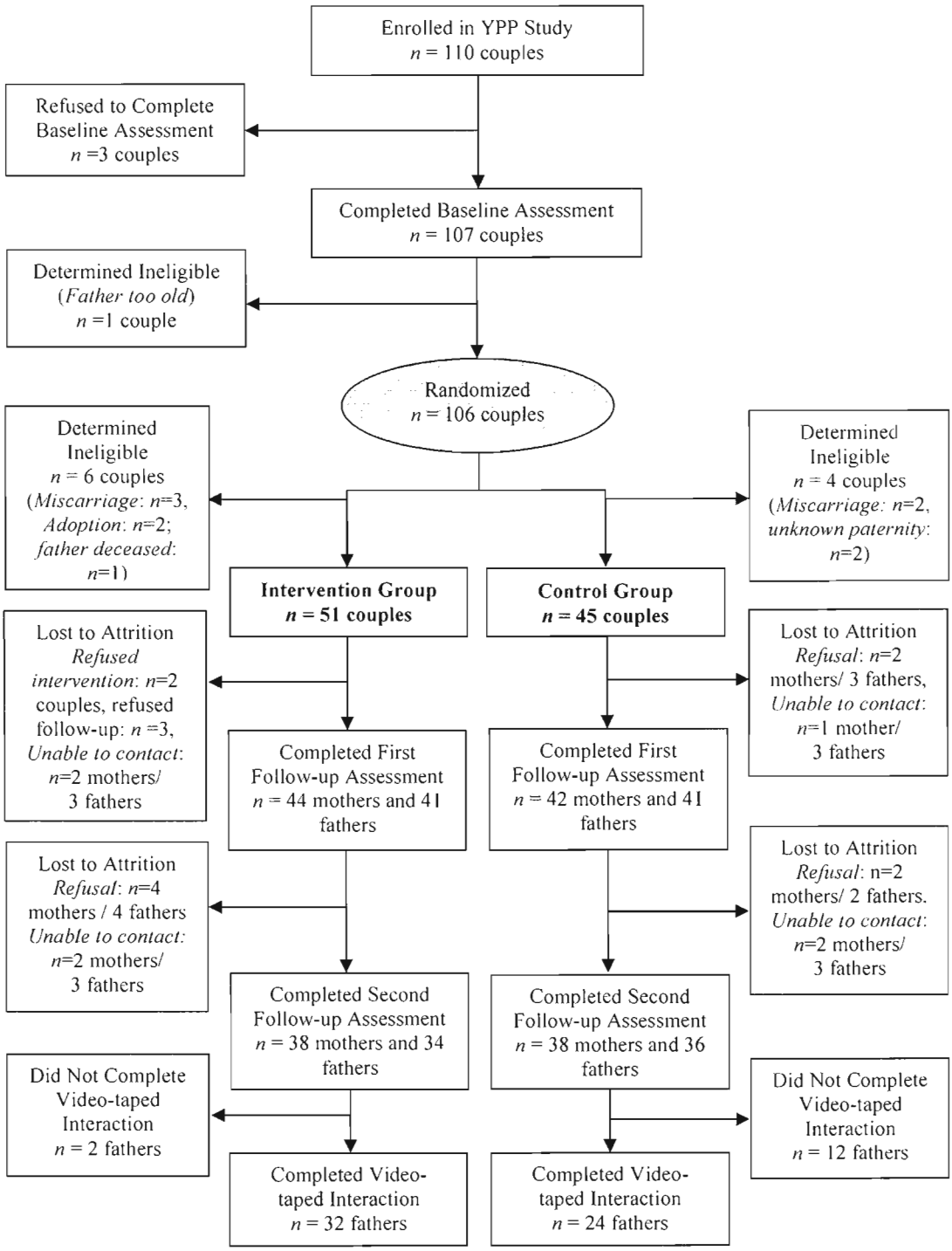

Figure 2. Flow Chart of Participant Attrition

reported FI scores differed for those fathers who completed the video assessment and those who did not. Results indicated that in the intervention group, fathers completing the video-taped interaction actually had significantly *lower* father-reported FI scores than those who did not complete it (t = 2.594, p = .014). In the control group, however, those fathers completing the video-taped interaction had significantly *higher* father-reported FI scores than those who did not (t = -2.278, p = .014). The trend seen in the control group for father-reported FI scores was also seen for mother-reported FI scores across both the intervention and control groups, with those fathers completing the video-taped interaction having significantly higher mother-reported FI scores than those not completing it (t = -3.326, p = 0.002).

Additional analyses were conducted to examine potential differences in baseline psychosocial functioning between those mothers and fathers who completed the T3 follow-up and those who did not. Within the intervention group, there was no significant difference in baseline psychosocial functioning between those adolescents who returned for the T3 follow-up and those who did not. Within the control group, however, adolescent mothers who did not return for the T3 follow-up had higher BDI-II scores at baseline than those who did not (t=2.773, p=0.008). Similarly, adolescent fathers in the control group who did not return for the follow-up assessment had significantly higher DCBC scores (t=2.609, p=.012) and DUI scores (t=2.374, p=.022) at baseline than fathers who did return for the follow-up assessment.

Missing Values

At the item-level, missing values were replaced using the series mean for participants whose total missing items did not exceed 10% on a given measure; no

measure had greater than 5% of items missing. At the scale level, multiple imputation (utilizing 10 imputations) was utilized to calculate missing scores for participants who had completed at least one follow-up measure (QRI, PAI, or FI). Multiple imputation has recently been recommended as one of the more effective strategies in handling missing values (Schlomer, Bauman & Card, 2010) Scores for participants who did not have at least one measure completed at follow-up were not imputed, given that our attrition analyses indicated that there were significant differences between those attending the follow-up assessment and those who did not. This is also a more conservative approach to data analysis. Additionally, no missing SASB data was imputed given the findings that those who did not complete the video-taped interaction differed significantly from those who did.

Coparenting Relationship Quality and Fathering Behaviors

In order to examine the relation between the quality of the coparenting relationship and fathering behaviors, bivariate correlations (reported in Table 4) were used to compare coparenting relationship quality (CRQ) scores with the father involvement (FI) scores and observed father warmth and autonomy scores.

Results indicated that mother-reported CRQ scores at T2 and T3, as well as father-reported CRQ scores at T3, were all positively correlated to mother-reported FI scores within the sample. However, only mother-reported CRQ scores at T3 were positively correlated to father-reported FI scores, and father-reported FI scores at T2 were actually *negatively* correlated to father-reported FI scores.

In assessing the relationship between CRQ scores and observed fathering quality, only father-reported CRQ scores at T3 were positively correlated to observed father

Table 4. Bivariate Correlations Between Outcome Variables

	FI-FR	FI-MR	CRQ-FR T2	CRQ-MR T2	CRQ-FR T3	CRQ-MR T3	Warmth Score	Autonomy Score
FI-FR	1	.239	-.316*	.034	.073	.321*	.092	.163
FI-MR		1	.192	.454***	.540***	.601***	-.043	-.227
CRQ-FR T2			1	.595***	.591***	.216	.207	.102
CRQ-MR T2				1	.388**	.452***	-.062	.037
CRQ-FR T3					1	.712***	.304*	-.294*
CRQ-MR T3						1	0.180	-.286*
Warmth Score							1	0.031
Autonomy Score								1

Note. FI=Father Involvement, CRQ=Coparenting Relationship Quality, MR=mother-reported, FR=father-reported

* $p<.05$

** $p<.01$

***$p<.001$

warmth. Additionally, both father- and mother-reported CRQ scores at T3 were *negatively* correlated to autonomy scores.

Intervention Effects on Father Involvement

A series of univariate ANOVAs were used to evaluate differences between the treatment and control groups on both mother-reported and father-reported Father Involvement (FI) scores. (See Table 5 for group means and standard deviations.) When father-reported FI scores were analyzed, fathers in the intervention group reported higher FI scores on average than fathers in the control group (F= 6.858, p=.011). When mother-reported scores were analyzed, however, there was no significant difference between the intervention and control group in FI scores.

To further investigate the discrepancy in results between the mother-reported and father-reported FI data, a father-mother difference score was calculated by subtracting the mother-reported FI score from the father-reported FI score. A t-test was then utilized to compare the resulting father-mother difference scores of the intervention and control groups. The mean difference between father- and mother-reported scores of father involvement was significantly higher in the intervention group than in the control group (t = 2.198, p = 0.032).

Intervention Effects on the Quality of Fathering

A series of univariate ANOVAs were used to examine the intervention effects on the quality of fathering behaviors observed during the play task. (See Table 5 for group means and standard deviations of warmth and autonomy scores.) When examining the observed autonomy-supporting behaviors, there were no significant differences found

Table 5. Means and Standard Deviations of Outcome Variables by Treatment Group

Outcome Variable	Intervention M *(SD)*	Control M *(SD)*	Effect Size (Cohen's *d*)
Father Involvement (FI)			
Mother-reported (*n* =76)	18.70 *(6.39)*	19.64 *(6.38)*	-0.147
Father-reported (*n* =70)	26.15 *(6.33)***	21.73 *(6.27)***	0.701**
Observed Fathering Quality			
Warmth (*n* =56)	.976 *(.037)**	.957 *(.067)**	0.351*
Autonomy (*n* =56)	.234 *(.071)*	.222 *(.083)*	0.155
Coparenting Relationship Quality (CRQ)			
Mother-reported T2 (*n* =86)	-0.481 *(3.32)*	0.516 *(2.96)*	-0.317
Father-reported T2 (*n* =82)	-0.220 *(3.62)*	0.229 *(2.82)*	-0.138
Mother-reported T3 (*n* =76)	-0.252 *(2.84)*	0.252 *(3.63)*	-0.155
Father-reported T3 (*n*=70)	0.188 *(2.80)*	-0.341 *(3.40)*	0.170

* Indicates significant difference at the $p<.10$ level

** Indicates significant difference at the $p<0.05$ level.

between intervention and control groups in the autonomy score. However, when examining observed warmth, the difference between intervention and control groups approached significance (F = 3.214, p = 0.079), with fathers in the intervention group displaying a slightly higher relative frequency of warm behaviors during the play task than fathers in the control group. Further analysis of the SASB codes indicated that there were no group differences in the relative frequencies of each code (reported in Table 6).

Intervention Effects on the Quality of the Coparenting Relationship

To investigate potential differences in the quality of the coparenting relationship between the intervention group and the control group, the mother-reported Coparenting Relationship Quality (CRQ) Score and the father-reported CRQ Score were analyzed separately using a series of univariate ANOVAS. No significant differences between treatment and control groups were found for either the mother-reported or father-reported CRQ scores, at either the T2 or T3 follow-up. (See Table 5 for means and standard deviations of CRQ scores.)

Table 6. Relative Frequencies of SASB Codes by Treatment Group

SASB Code	Intervention (n = 32) M *(SD)*	Control (n = 24) M *(SD)*	Effect Size (Cohen's d)
1-1	.001 *(.005)*	.006 *(.029)*	-0.240
1-2	.182 *(.068)*	.188 *(.082)*	0.080
1-3	.014 *(.022)*	.014 *(.028)*	0
1-4	.745 *(.067)*	.738 *(.100)*	.082
1-5	.016 *(.030)*	.030 *(.057)*	-.307
1-6	.003 *(.008)*	.001 *(.002)*	.343
1-7	.000 *(.000)*	.000 *(.000)*	0
1-8	.000 *(.000)*	.001 *(.006)*	-0.236
2-1	.004 *(.018)*	.004 *(.012)*	0
2-2	.035 *(.049)*	.018 *(.030)*	0.418

DISCUSSION

Purpose

The primary aim of the current study was to examine the effectiveness of a coparenting intervention designed for expectant adolescent couples in improving fathering behaviors. As discussed previously, both the quantity and the quality of fathering have been shown to play important roles in predicting child outcomes (e.g., Brown et al., 2007; Easterbrooks & Goldberg, 1984). With this understanding, it was important for the current study to examine whether a coparenting intervention for adolescent couples could potentially be beneficial in improving not only the *quantity* of father involvement in child-rearing activities, but also the *quality* of the young father's interactions with his child.

The second aim of the study was to investigate the quality of the coparenting relationship as a mediator of the intervention effects on fathering behaviors. The current intervention was designed to specifically target the quality of the coparenting relationship based on prior research supporting the "spill-over" effect amongst adolescent couples (Easterbrooks et al., 2007; Florsheim & Smith, 2005; Moore & Florsheim, 2008), or the idea that the quality of the coparenting relationship would spill-over into the quality of parent-child interactions. Because of this, it was important to investigate the quality of the coparenting relationship as a mediator of the intervention effects on fathering behaviors.

The results of the current study will first be discussed in the context of understanding whether and how coparenting interventions can be effective in improving fathering behaviors amongst young fathers, and will then be discussed in the context of their implications for the further development of coparenting interventions for use with adolescents.

Improving Fathering With Coparenting Interventions

In the current study, the intervention effects on father involvement were assessed using both mother-reported and father-reported measures of father involvement. Based solely on father-reported data, the results of the current study indicate that a prebirth coparenting intervention could be effective in improving the extent of father involvement in child-rearing activities amongst young fathers. Fathers in the intervention group were more likely to indicate that they either shared the responsibility of various child-rearing activities with their partner or were solely responsible for various child-rearing activities.

While previous studies of coparenting interventions have demonstrated their success in improving father involvement amongst adults (Feinberg & Kan, 2008), the ability for coparenting interventions to improve father involvement amongst adolescents is particularly noteworthy. Adolescent fathers have typically been characterized in the research literature by their lack of involvement in their children's lives (Danziger & Radin, 1990; Hardy, Duggan, Masnyk & Pearson, 1989). This not only highlights the need for interventions to improve father involvement amongst young fathers, but also indicates that increasing father involvement amongst young fathers may be particularly difficult.

The results of the current study, as well as the results of Fagan's study on a group coparenting intervention for young fathers (2008), offer support for the ability of prebirth coparenting interventions to increase fathers' perceptions of their involvement in child-rearing activities amongst young fathers. These findings also have important implications for the well-being of children born to adolescent parents as well. Although not specifically assessed in the current study or in Fagan's study, the ability of coparenting interventions to improve father involvement could also translate into improved child functioning, given research implicating father involvement as an important predictor of child outcomes (Cutrona et al., 1998; Furstenberg & Hughes, 1995; Marsiglio et al., 2000).

While the results of the father-reported data from the current study are promising, it is also important to consider the mother-reported data on father involvement, as well. Unfortunately, there were no identified intervention effects on father involvement with the mother-reported data in the current study, which is consistent with Fagan's findings (2008).

To better understand the difference in mother-reported and father-reported scores of father involvement in the current study, it is important to consider how the discrepancy between the father-reported and mother-reported data differed between the intervention and control groups. Results indicated that there was a *greater* discrepancy between the mother- and father-reports of father involvement in the intervention group than in the control group, which could be explained in one of two ways. One possibility is that the mothers in the intervention group, as a result of the emphasis on the importance of coparenting in the intervention, may have differing expectations of their partners than

those mothers in the control group. If the mothers in the intervention group have higher expectations for the ideal level of father involvement, they may be more likely to rate father involvement lower as compared to mothers with lower expectations, therefore negating any potential intervention effects within the mother-reported data.

Alternatively, fathers in the intervention could be more aware of the discrepancy between ideal father involvement and their own lack of involvement, perhaps leaving them more vulnerable to the effects of a response bias. If this is the case, it is possible that the demonstrated intervention effects within the father-reported data were exaggerated. Considering these two alternative explanations highlights the complexity in knowing which source (mother or father) is a more valid indicator of father involvement. It seems plausible that both explanations could be operating, that is, that mothers in the intervention are underreporting father involvement while at the same time fathers in the intervention group are over-reporting their involvement. With this understanding, averaging the mother-reported and father-reported scores may offer a more balanced and valid indication of father involvement.

Because recent research has indicated that the quality of fathering, in addition to the quantity of fathering, plays an important role in predicting child outcomes (Brown et al., 2007; Easterbrooks & Goldberg, 1984), the current study aimed to assess the effectiveness of a prebirth coparenting intervention in improving not only the extent of father involvement, but the *quality* of fathering as well. While Fagan (2008) demonstrated improvements in father involvement using a group coparenting intervention for adolescent fathers, the quality of fathering was not assessed. The results of the current study indicate that a coparenting intervention for adolescents may be effective in

increasing how warm fathers are when interacting with their children. While the difference in father warmth between the intervention and control groups was only marginally significant, it is possible that with a larger sample size these results would be significant.

One question that needs to be answered, however, is whether or not the observed difference between treatment groups in father warmth is actually a meaningful difference. The overall difference between the intervention and control groups in the percentage of observed warm behaviors was only 2%. In order to assess whether this is a meaningful difference, it will be important for future studies to also include measures of child outcomes in order to determine whether small differences in warmth (and hence small differences in nonwarmth) affect child outcomes.

While the results of the current study indicate that coparenting interventions could be effective in increasing father warmth, the current study was unable to identify any intervention effects on the degree of autonomy-supporting behaviors observed amongst young fathers. While this lack of significant findings in relation to autonomy-supporting behaviors and the minimal differences in father warmth could be considered disheartening, it is important to consider that this may be a function of the type of play task used, rather than the intervention itself.

The current study utilized a free-play task to assess the quality of fathering in terms of both the degree of father warmth/hostility present in the interaction as well as the degree of autonomy-supporting/controlling behaviors. In analyzing the range of observed behaviors displayed during the play interaction, it became apparent that there was very little variability both between groups, as well as *within* groups, with a strong

majority of behaviors falling in cluster 4 of the SASB model (warm control). It is possible that the nature of a play task elicits primarily warm behaviors, and does not capture the true variability of fathering behaviors that may be present in the sample. One alternative is to include a task in which fathers are asked to complete a specific task with their child. It is possible that the inclusion of a goal-oriented task might capture a greater range of wamth versus hostility amongst young fathers, which may make it easier to observe group differences in the quality of fathering.

Improving the Coparenting Relationship Amongst Expectant Adolescents

The results of the current study indicate that the intervention was most likely not effective in improving either mothers' or fathers' perceptions of the quality of the coparenting relationship, as there were no group differences in mother- or father-reported CRQ scores at either the T2 or T3 follow-up. As discussed previously, adolescent parents, as compared to adults, are less likely to maintain long-term relationships with their partners (Fagan et al., 2007), and expectant adolescent couples, as compared to nonexpectant adolescent couples, are more likely to have higher rates of hostility in the couple relationship (Moore & Florsheim, 2001). These two factors (increased hostility in the couple relationship and difficulty maintaining long-term romantic relations) contribute to the difficulty in implementing successful coparenting interventions with expectant adolescents and may in part explain the lack of intervention effects found in the current study. It is important to consider, however, that this was only the second coparenting intervention to be used with adolescents and the first to involve both adolescent mothers and young fathers together in the intervention. It is possible that with

further refinement of the intervention model, the coparenting intervention could be successful in improving the coparenting relationship quality amongst adolescents.

While it was predicted that the intervention effects on fathering behaviors would be mediated in part by the coparenting relationship quality, the lack of intervention effects on the quality of the coparenting relationship indicate that it was not a likely mediator of the observed intervention effects on fathering behaviors. This indicates that while the intervention had some direct effects on father involvement and father warmth, there were no *indirect* intervention effects on fathering behaviors arising from improvements in the coparenting relationship, which was what was predicted. However, the results of the current study do indicate that the quality of the coparenting relationship is highly related to fathering behaviors, which offers continuing support for the importance of the spill-over effect amongst adolescent couples.

Support for the spill-over effect can be seen in the correlations between the CRQ scores and FI scores, which indicate that fathers are more likely to be involved in child-rearing activities when the coparenting relationship quality is high. The results also indicate that mothers' perceptions of the relationship quality (as compared to fathers' perceptions), seem to be particularly important in predicting father involvement, as mother-reported CRQ scores at T2 and T3 were correlated to mother-reported FI scores, and mother-reported CRQ scores at T3 were correlated to father-reported FI scores.

Additional support for the spill-over effect (and for the importance of mothers' perceptions of the coparenting relationship quality) can be seen when examining the relation between coparenting relationship quality and the observed quality of fathering behaviors. Results indicated that higher mother-reported relationship quality at T3

correlated with higher levels of father warmth in the play interaction. Additionally, both mother and father reports of the relationship quality at T3 were related to the level of autonomy-supporting behaviors in the play interaction. However, the correlation between relationship quality and autonomy-support was negative, which is in the opposite direction as would have been expected.

While this result is puzzling, it could be possible that for the adolescent couples in our study, higher coparenting relationship quality might actually be associated with higher degrees of enmeshment in the couple relationship, which would indicate higher degrees of control/submission present in the couple relationship. If this is the case, then it is possible that this higher degree of enmeshment "spills-over" and translates into a higher degree of control present in the father-child relationship as well. Another explanation of the negative correlation between relationship quality and autonomy-support is that the autonomy-support may actually be related to the extent of father involvement. Fathers that are *less* involved in child-rearing activities may actually feel *less* comfortable teaching and instructing their children, which would result in a higher autonomy score. This explanation is also partially supported by the negative correlation between mother-reported FI scores and autonomy scores which approached significance. It is important that this negative correlation be further investigates, as it is important for parents to encourage the development of autonomy in their children (Edwards & Liu, 1995; Erikson, 1966; Grossman & Grossman, 2003).

Regardless of the interpretation of the negative correlation between coparenting relationship quality and autonomy scores, it seems apparent that the quality of the coparenting relationship is related to father involvement and the quality of fathering

behaviors, offering support for the spill-over effect. The understanding that the spill-over effect is operating amongst expectant adolescent couples is important, because it offers further impetus to continue refining coparenting interventions to be used with adolescent couples in the future. It is possible that further refinement of the coparenting intervention to effectively target the quality of the coparenting relationship would translate to increased improvements in father involvement and the quality of fathering.

Limitations of the Current Study

One of the major limitations of the current study is the small sample size at follow-up resulting from the high attrition rates of the sample. While the high attrition rate is in part a reflection of the difficulty in collecting longitudinal data with a high-risk population, it also has important implications for the implementation of coparenting interventions for adolescents in community settings. The difficulty in retaining expectant adolescent couples in a research study for which they are paid will likely translate into an even greater difficulty in initiating and maintaining engagement in treatment in the community setting.

The results of the attrition analyses also revealed important differences between mothers and fathers who returned for the follow-up assessment and mothers and fathers who did not. It seems that the mothers and fathers who *did not* return for the follow-up assessment represented a higher-risk population at baseline than those adolescent mothers and fathers who did return for their follow-up assessment. Nonreturning mothers had higher baseline depression scores than returning mothers, while nonreturning fathers had higher delinquency and drug-use scores than returning fathers. While this further emphasizes the difficulty in engaging high-risk populations in research and treatment, it

also could be affecting the significance of the results found in the current study. Without this higher-risk population included in the control group, the control group scores at follow-up could be inflated, therefore minimizing the effects of the intervention in the current study. Additionally, it is difficult to know how this higher-risk population would respond to treatment.

Another limitation of the current study is related to the ethnic diversity of the sample. While the high percentage of Latinos and Latinas in the sample is a strength (especially given the relative lack of Latinos and Latinas represented in psychological research in general), the current study lacks the representation of other ethnic minorities, including African Americans. Although the ethnic composition of the sample is reflective of the geographical location from which the sample was taken, it still limits the ability of the results to be generalized to other ethnic groups. It is possible that the current intervention could have differing effects amongst African Americans and other ethnic minority populations. Additionally, the small sample size of the current study did not allow for the intervention effects to be examined separately within different ethnicities, which might have revealed different relations amongst outcome variables.

Future Directions

As discussed previously, the current study was the first to examine the effects of a prebirth coparenting intervention that included both adolescent mothers and young fathers together in the intervention. Although the current study found only minimal differences between intervention and control groups on outcome variables, these differences offer support for the continued development of coparenting interventions for use with adolescents and can be used to better understand how coparenting interventions

could be modified to increase their effectiveness amongst adolescent mothers and young fathers in the future.

In future studies, it may be important to first begin with furthering our understanding of the factors that affect the coparenting relationship amongst adolescents and examine how this might differ amongst varying ethnicities. It is possible that for adolescents, relations with parents and other family members may play a greater role in the quality of the coparenting relationship as compared to adults. In fact, for some adolescents, it is likely that their own parents could be acting as additional coparents. With an understanding of how extended family relations may be impacting the coparenting relationship, it may be possible to develop interventions that involve other family members in the coparenting intervention in addition to the expectant adolescent mothers and fathers.

In order to maximize the effectiveness of coparenting interventions with adolescents, it may be helpful to supplement the coparenting intervention with additional services. One such example would be to incorporate more instruction on parenting practices in order to directly improve fathering behaviors. While focusing on the coparenting relationship could *indirectly* improve fathering behaviors, including instruction on parenting practices would help to increase the direct effects of the intervention on father involvement and the quality of parenting.

Another way in which coparenting interventions could be supplemented with additional resources would be to incorporate case-management services into the intervention model. Given the relatively high rates of depression, drug use and delinquency seen in the current sample, it may be important to help young fathers (and

young mothers) improve their psychosocial functioning in order to allow for greater improvements in the quality of the coparenting relationship as well as parenting practices. Case-management services could be helpful in helping adolescent mothers and fathers find additional mental health services in the community, such as substance-abuse treatment programs, and could also be utilized to reduce some of the barriers to father-involvement, including a lack of education and financial resources.

Finally, it will be important for future research on coparenting interventions with adolescents to examine their effectiveness amongst ethnic minorities. While the inclusion of ethnic minorities in the study sample is a step in the right direction, it will be important for the effectiveness of such interventions within ethnic minority populations to be examined separately, which will hopefully allow for the development of coparenting interventions for adolescents that are effective cross-culturally.

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